

NCR 19-7210

due for end of oct.



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

646.3013

Job Sheet 200355



Part No: 646.3013

Job Qty: 12 pcs

Part Name: Blade



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/10/19

Job Tracking No:

Due Date: 10/15/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV N/C SHEET 10 IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Bandsaw - 1	12 pcs	10/15/19	10/15/19	0.00	0.21	Bandsaw - 1		KT 19-10-07
110	HAAS 4 Axis - B4B	12 pcs	10/15/19	10/15/19	0.13	10.85	HAAS - 1 - B4B		KT 19-10-07
							HAAS - 2 - B4B		
							HAAS - 3 - B4B		
							HAAS - 4 - B4B		
120	QC 2	12 pcs	10/15/19	10/15/19	0.00	0.00	QC 2 - 1		KT 19-10-07
							QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		
							QC 2 - 35		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 57		
							QC 2 - 62		



Container No: S220376



Part: 646.3013

Job No: 200355

Serial No/Batch: S220376

Revision: Rev N/C

Inspector:

Exp Date:

Instructions: Various STC's

Date: 11/16/19

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

					QC 2 - 63	
					QC 2 - 8	
					QC 2 - 66	
					QC 2 - 64	
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
130	QC 8	12 pcs	10/15/19	0.00 0.00	QC 8 - 12	
					QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
					QC 8 - 4	
					QC 8 - 44	
					QC 8 - 45	
					QC 8 - 49	mmc 9/10/19
					QC 8 - 58	
					QC 8 - 8	
					QC 8 - 9	
					QC 8 - 68	
					QC 8 - 67	
					QC 8 - 1 (A)	
					QC 8 - 47	
					QC 8 - 40	
					QC 8 - 52	
					QC 8 - 23	
					QC 8 - 57	
					QC 8 - 76	
140	Outsource - 1 - Heat Treat	12 pcs	10/15/19		MEI001-VC	5 2019-10-16
150	Packaging 2-1 - Receive - B4B	12 pcs	10/15/19	0.00 0.00	Packaging 2 - 1 - B4B	
					Packaging 2 - 2 - B4B	
					Packaging 2 - 3 - B4B	
					Packaging 2 - 5 - B4B	
					Packaging 2 - 4 - B4B	
					Packaging 2 - 6 - B4B	
					Packaging 2 - 7 - B4B	
					Packaging 2 - 8 - B4B	
					Packaging 2 - 9 - B4B	
					Packaging 2 - 10 - B4B	
					Packaging 2 - 11 - B4B	
					Packaging 2 - 12 - B4B	
					Packaging 2 - 13 - B4B	DP OCT 30 2019
					Packaging 2 - 14 - B4B	
					Packaging 2 - 15 - B4B	
					Packaging 2 - 16 - B4B	

				Packaging 2 - 17 - B4B	
				Packaging 2 - 18 - B4B	
				Packaging 2 - 19 - B4B	
				Packaging 2 - 20 - B4B	
				Packaging 2 - 21 - B4B	
				Packaging 2 - 22 - B4B	
				Packaging 2 - 23 - B4B	
				Packaging 2 - 24 - B4B	
				Packaging 2 - 25 - B4B	
				Packaging 2 - 26 - B4B	
				Packaging 2 - 27 - B4B	
				Packaging 2 - 28 - B4B	
				Packaging 2 - 29 - B4B	
				Packaging 2 - 30 - B4B	
				Packaging 2 - 31 - B4B	
				Packaging 2 - 32 - B4B	
				Packaging 2 - 33 - B4B	
				Packaging 2 - 34 - B4B	
				Packaging 2 - 35 - B4B	
				Packaging 2 - 36 - B4B	
155	QC 6	12 pcs	10/15/19	0.00 0.00	QC 6 - 9
					QC 6 - 68
					QC 6 - 61
					QC 6 - 40
					QC 6 - 81
160	Spray Paint - 2 - B4B	12 pcs	10/15/19	0.00 0.46	Spray Paint - 1 - B4B
					Spray Paint - 2 - B4B
					Spray Paint - 3 - B4B
					Spray Paint - 4 - B4B
170	QC 14	12 pcs	10/15/19	0.00 0.00	QC 14 - 15
					QC 14 - 2
					QC 14 - 34
					QC 14 - 41
					QC 14 - 51
					QC 14 - 58
					QC 14 - 59
					QC 14 - 9
					QC 14 - 68
					QC 14 - 40
					QC 14 - 19
					QC 14 - 43
					QC 14 - 24
					QC 14 - 61

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180	Packaging 3-1 - Stock - B4B	12 pcs	10/15/19	0.00	0.00	QC 14 - 81	
						Packaging 3 - 1 - B4B	
						Packaging 3 - 2 - B4B	
						Packaging 3 - 3 - B4B	
						Packaging 3 - 4 - B4B	
						Packaging 3 - 5 - B4B	
						Packaging 3 - 6 - B4B	
						Packaging 3 - 7 - B4B	
						Packaging 3 - 8 - B4B	
						Packaging 3 - 9 - B4B	
						Packaging 3 - 10 - B4B	
						Packaging 3 - 11 - B4B	
						Packaging 3 - 12 - B4B	
						Packaging 3 - 13 - B4B	
						Packaging 3 - 14 - B4B	
						Packaging 3 - 15 - B4B	
						Packaging 3 - 16 - B4B	
						Packaging 3 - 17 - B4B	
						Packaging 3 - 18 - B4B	
						Packaging 3 - 19 - B4B	
						Packaging 3 - 20 - B4B	
						Packaging 3 - 21 - B4B	
						Packaging 3 - 22 - B4B	DAS 41 NOV 16 2019 9-09
						Packaging 3 - 23 - B4B	
						Packaging 3 - 24 - B4B	
						Packaging 3 - 25 - B4B	
						Packaging 3 - 26 - B4B	
						Packaging 3 - 27 - B4B	
						Packaging 3 - 28 - B4B	
						Packaging 3 - 29 - B4B	
						Packaging 3 - 30 - B4B	
						Packaging 3 - 31 - B4B	
						Packaging 3 - 32 - B4B	
						Packaging 3 - 33 - B4B	
						Packaging 3 - 34 - B4B	
						Packaging 3 - 35 - B4B	
						Packaging 3 - 36 - B4B	

190 QC 21 - SA

12
pcs

10/15/19 0.00 0.00

QC 21 - SA - 21

DAS

NOV 18 2019

QC 21 - SA - 70

21

QC 21 - SA - 53

3-58

Part Op 100 - Cut Blank at 4.930"

Descriptions: 110 - (HAAS CNC Vertical Machine) 1-Machine per folio FB150 2- deburr and break all sharp edges except otherwise noted KNIFE EDGE MUST BE SHARPENED USING STONE, REMOVE ALL BURRS ON CUTTING EDGE

120 - (QC2- Inspect parts off machine FAI/FAIB)

130 - (QC8- Inspect parts - second check)

140 - ISSUE P/O: 44781 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As Per Dwg 646.3000
PART ARE MADE FROM AISI A2 TOOL STEEL

150 - (Receive & Inspect for Damage & Mat'l Certs)

155 - (QC6- All purchased or subcontracted products)

160 - (Spray Paint / NDT Room) PRIME AS PER DWG, SEE NOTE #4 PRIMER BATCH: 5195271

170 - (QC14- Inspect Spray Paint)

180 - (Identify as per dwg & Stock Location: ck101) ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

190 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
MSTEEL-A2-B0.500X1.250	AISI A2 Tool Steel Bar, 0.500 X 1.250	5.0520 ft (.421 ea)	100-Bandsaw - 1	<u>5216480</u>

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Bandsaw - 1	MSTEEL-A2-B0.500X1.250	5	26	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Blade	0.375inches $\pm$ 0.005	0.380 0.370		
2	Blade	66.500Degrees $\pm$ 0.500	67.000 66.000	Angle	
3	Blade	0.177inches $\pm$ 0.005 - 0.001	0.182 0.176	Diameter	
4	Blade	4.800inches $\pm$ 0.010 - 0.001	4.810 4.799		
5	Blade	4.396inches $\pm$ 0.005	4.401 4.391		
6	Blade	0.576inches $\pm$ 0.005	0.581 0.571		
7	Blade	45.000Degrees $\pm$ 0.500	45.500 44.500	Angle	
8	Blade	0.635inches $\pm$ 0.002	0.637 0.633		
9	Blade	1.109inches $\pm$ 0.002	1.111 1.107		
10	Blade	0.240inches $\pm$ 0.002	0.242 0.238		
11	Blade	0.576inches $\pm$ 0.005	0.581 0.571		
12	Blade	0.940inches $\pm$ 0.010	0.950 0.930		
13	Blade	0.125inches $\pm$ 0.005	0.130 0.120	Radius	
14	Blade	60.000Degrees $\pm$ 0.500	60.500 59.500	Angle	
15	Blade	0.325inches $\pm$ 0.005	0.330 0.320		
16	Blade	30.000Degrees $\pm$ 0.000	30.000 30.000	Angle	

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Dart Aerospace Ltd.
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Hawkesbury, ON
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Tel (613) 632-5200

PURCHASE ORDER **POHB044781**



Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

Attention: Bejenaru, Livia

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB044781

PO Date: 10/16/19

Due Date: 11/4/19

Purchase Order
Revision:

Revision Date:

Ship-To Contact: Guerin, Kimberley
Phone: 613-632-5200 Ext: 298
kguerin@dartaero.com

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
2019-10-18

Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	199051	RBW6510G06531-6F-2	RBW6510G06531-6F Rev A	Support #1 1-Issue P/O Heat treat RC 28-32 2-Bead blast - parts to be lightly oiled after bead blast 3-Material type 4140 4-Certificate of Conformity is required	Firmed	-	11/4/19	7 pcs	0 pcs	7 pcs	\$52.4321/pcs	\$367.02
2	199052	RBW6510G06531-6F-3	RBW6510G06531-6F Rev A	Support #2 1-Issue P/O; Heat treat RC 28-32 2-Bead blast - parts to be lightly oiled after bead blast 3-Material type; 4140 4-Certificate of Conformity is required	Firmed	-	11/4/19	7 pcs	0 pcs	7 pcs	\$52.4321/pcs	\$367.02



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PURCHASE ORDER

POHB044781



Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	200568	8NR-49	8NR-49 Rev 2	Stiffener 2 Hole (Outsource process - Heat Treat) 1-Issue P/O to Metcore RC 45-50 2-Bead blast 3-Material 4140 4-Apply LPS-3 to ALL steel parts 5-Certificate of Conformity is required	Firmed	-	11/4/19	10 pcs	0 pcs	10 pcs	\$31.40/pcs	\$314.00
4	200355	646.3013	646.3000 Rev N/C	Blade : Various STC's ISSUE P/O: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As Per Dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	-	11/4/19	20 pcs	0 pcs	20 pcs	\$7.6585/pcs	\$153.17
5	200358	646.3014	646.3000 Rev N/C	Blade : Various STC's ISSUE P/O: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As Per Dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL HEAT TREAT AS PER DWG, SEE NOTE #3	Firmed	-	11/4/19	21 pcs	0 pcs	21 pcs	\$7.6585/pcs	\$160.83

OCT 30 2019

OCT 30 2019



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PURCHASE ORDER

POHB044781



Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	199032	RBW6500G04231-3G-2	RBW6500G04231-3G Rev B	Base 1-Issue P/O Heat treat RC 28-32 2-Bead blast 3-Apply LPS-3 rust inhibitor 4-Material type 4140 5-Certificate of Conformity is required	Firmed	-	11/4/19	6 pcs	0 pcs	6 pcs	\$52.3333/pcs	\$314.00
											Grand Total: \$1,676.05	

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 10/18/19 11:39 AM Dart.Guerin.Kimberley

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
340079	1	141042

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À / Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
HB044781		A2	2019/10/16	client
QUANTITÉ Quantity	No. PIÈCE / Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight

41 646.3013
(20) 646.3013
JOB 200355

(21) 646.3014
JOB 200358

11,

1 BOITE DE CARTON

DA
8AS
981
9-89

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
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BOITE DE CARTON 1

CERTIFICAT

EXPÉDIÉ PAR: Shipped by:	
-----------------------------	--

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 41

POIDS EXPÉDIÉ / Weight Shipped : 11,00

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

RECEIVED

OCT 30 2019

DART AEROSPACE LTD.

APPROUVÉ
[Signature]

CERTIFICAT

QUANTITÉ EXPÉDIÉE / Quantity Shipped: 41

POIDS EXPÉDIÉ / Weight Shipped : 11,00

Signature:

Date:

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
340079	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
HB044781	N/A	A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
DAS 81 9-89				
EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results	
HARDNESS	58 - 62 HRC	5 (907)	59 - 60 HRC	
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
41	11	646.3013 (20) 646.3013 JOB 200355 (21) 646.3014 JOB 200358 1 BOITE DE CARTON		

COMMENTAIRES / comments

VAC HARDEN 1825°F - 1:15 HRS
DOUBLE TEMPER 400°F - 2:00 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
340079	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

Ce document et les documents qui lui sont joints peuvent contenir des informations confidentielles, être soumis aux réglementations relatives au contrôle des exportations ou ayant un caractère privé. S'ils ne vous sont pas destinés, nous vous signalons qu'il est strictement interdit de les divulguer, de les reproduire ou d'en utiliser de quelque manière que ce soit le contenu. Toute exportation ou réexportation non autorisée est interdite.

APPROUVÉ par / Approved by:

DATE: 2019-10-28

Lucie Desmarais
QA Technician



Entered: DB Date: 19-10-07
 NCR No. 19-7710



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only

Job: <u>200355</u> Part No. <u>646.3033</u>		DEPARTMENT/PROCESS Cross tube ☐ Eng. (Non-AW) ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Finishing ☐ Rec/Store/Packaging ☐ Skid-tube Machining ☒ Large Fab ☐ Rework ☒ Scrap ☐ Use-as-is ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐	
Date: <u>10-07-19</u> Sequence #: <u>110</u>	QTY Affected: <u>1</u>	MRB (QS1042) DAS <u>9</u> 9-89 <u>19-11-13</u>	
Description Work Order Deviation <u>Positioned wrong on the original</u>		Disposition <u>Scrap and replace</u> <u>S216780</u>	
Completed By <u>19-10-07</u> <u>19-10-07</u>		Lead hand / Supervisor <u>19-10-07</u> <u>19-10-07</u>	
QC / QA Coordinator DAS <u>68</u> 9-89 <u>09</u> OCT 09 2019			

Root Cause Operator ☒ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Other/Details:				Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☒				Positioned Wrong ☒ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread ☐			
---	--	--	--	--	--	---	--	--	--	---	--	--	--